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NEST AND EGGS OF BACHMANS SPARROWS

THE WILSON BULLETIN

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NESTING OF BACHMANS SPARROW

ALBERT F. GAINER

Throughout middle Tennessee, the Bachmans Sparrow (*Peucæa æstivalis bachmani*) is a fairly common summer resident, where suitable habitat occurs. The habitat to which it is most partial consists of wooded pasture lands, in which there is a good growth of long grass, or tree bordered edges of old fields where grass rather than weeds predominate. Here its song may be heard from its arrival early in April until its departure in October. The surprising sweetness and clearness of its song has brought forth many published descriptions, among which might be mentioned one from this section, by Dr. R. M. Strong, which appeared in The Auk for April, 1918, page 226.

The nest of this sparrow is quite difficult to locate, due to the terrestrial habits of the birds and the difficulty of flushing them while incubating. The nest figured as the frontispiece of this issue was found by myself on July 20, 1918, when it held four fresh eggs. The lateness of the date was surprising. It was located in an extensive wooded pasture, about a mile south of the limits of Nashville, and the immediate environment is shown by the small photograph. The nest was found by flushing both birds from it. They flew only a yard and then began to run through the grass like mice. I walked after one for a distance of 100 feet before it took wing. On returning to my handkerchief, which I had left behind to mark the spot, I found the nest well hidden in the midst of thick grass. It much resembled a nest of the Meadowlark in that it was arched over and completely hidden from above. The nest was sub-

stantially built of coarse grass and was lined with fine grass and a few long horse hairs. There was no depression in the ground under the nest. The half acre adjacent to the site was low and damp and covered with long grass. A prolonged drouth had no doubt driven the birds from their usual habitat on higher ground to this relatively damp spot. The parent birds did not assert their presence while the nest was being photographed.

A week later, and within 50 feet of the nest site, I flushed a Bachmans Sparrow which feigned crippledness as it fluttered off through the grass. A search revealed two young birds just learning to fly and which were captured. The one parent bird present remained near and most persistently endeavored to lure me away by fluttering through the grass, sometimes coming to within five feet of where I held the young in my hand.

Nashville, Tenn.

COMPARATIVE PERIODS OF NESTLING LIFE OF SOME NORTH AMERICAN NIDICOLÆ

BY FRANK L. BURNS

The term Nidicolæ (Altrices) as defined by Dr. Newton indicates the species or groups of birds having the young born in a more or less helpless condition, unable to leave the nest for some time and fed directly by the parent. Little reliance, however, can be placed upon the mere fact of direct feeding of the young by the parents as a diagnosis of Nidicolæ, since the young of many præcocial groups (the Grebes, Loons, Murrelets, Gulls, Terns, Flamingoes and Cranes) are also heterophagous; therefore the distinction is better expressed by Dr. Gadow: in a condition in which the development of the sense, tegumentary and locomotory organs are shifted on to the post-embryonic period; in distinction to Nidifugæ (Præcoces), in which the development of the same organs are far advanced, enabling the young to leave the nesting site almost immediately after birth.

Modern systematists place little reliance on the con-

dition of the young at birth as a taxonomic character, though in the past, unsuccessful efforts have been made to produce a satisfactory physiological arrangement of our birds based upon this peculiar state, grouped in accordance with external characters such as the shape of the bill and feet.

In the Water Birds there are some groups of Nidicolæ more nearly related in every essential character to the lower Nidifugæ, though the relatively higher group, the strictly Land Birds, are nearly all Nidicolæ, the exceptions being the Gallinaceous birds.

Nidificate species constructing elaborate nests or laboriously tunneling in the earth or wood, are all or nearly all nidicolous; while the nidifugous birds are essentially terrestrial and frequently deposit their eggs on the bare ground or rocks, with the exception of the Ducks, which heavily line their nests with feathers plucked from their own breasts; at best their nests are little more than rubbish heaps of earth, leaves or grasses. As a taxonomic character for groups, there are some inconsistencies; the *Alcidæ*, for instance, are not all nidicolous; according to recent observations the young of the Murrelets (at least the Ancient, Xantus's, and Craveri's Murrelets, all of which take to the sea in from one to three or four days), are nidifugous.

The higher types of Nidicolæ (young hatched in a blind or helpless and naked or semi-naked condition, never acquiring natal down, or acquiring natal down growing from the tips of the juvenal plumage) are characteristic of the higher, more specialized groups.

It has been thought not only that the ancestral type of our birds was nidifugous but that the protective aboreal nesting habits led to nidicolous young; a hypothesis not at all nullified by the fact of so many nidicolous species belonging to phylogenetically older groups and to groups having ground-nesting or near ground-nesting habits; for these species nest exclusively or almost exclusively in colonies and on islands affording protection from their natural enemies equal if not superior to the elevation of the arbor-

eal nester on the mainland, and the conditions of environment made further changes impossible.

The eminent anatomist Pycroft in his paper entitled "The Significance of the Condition of the Young at Birth," (*Popular Science Monthly, lxii,* 108 *and further elaborated in "The Infancy of Animals,"*), however, considers that birds were originally arboreal. He states that the structure of the feet of the *Archæopteryx* (the earliest bird known to science) would prove it strictly arboreal and suggests the conclusion that the reptilian stock from which the Aves are descended was probably also arboreal, and considers that we probably have in the arboreal South American Hoactzin (the young of which scrambles about the branches in a truly reptilian manner) a direct survival of the proavian type of nesting; the nidifugous young differing from other nidifugous young in the prehensile character of its wings. He claims that the facts justify the theory, (1) that birds were originally arboreal and their young nidifugous; (2) that the nidicolous habits and helplessness of young birds are specialized adaptations to an arboreal or gregarous mode of life, and (3) that the young of Gallinaceous birds form a link in the chain of evolution of nidifugous habits. The free finger tips and arrested development of the outer quill-feathers point to a prior arboreal habit, whilst the accelerated development of the inner quill-feathers indicates an adaptation to enable the young to escape from enemies surrounding a terrestrial nursery.

He believes that systematists attach too much importance to the diverse conditions presented by the young of different groups of birds at birth and that the significance of these conditions has been misunderstood. The real explanation seems to turn to expediency, designed to reduce infant mortality: (1) by depositing the egg upon the ground, or (2) curtailing the activity of the young. "One great disadvantage attendant on precocious development of the young whose nursery is in the tree tops is obvious — the nestling would be constantly in danger of falling to the ground, and a large number would indeed

meet with this fate . . . those species which, while retaining their arboreal nesting habits, have adopted the method of curtailing the activity of the young. This process was accomplished by reducing the food-yolk within the egg, and thus inducing an earlier hatching period. We may approximately measure the extent to which this reduction has been carried by the degree of helplessness displayed by the newly hatched bird, and by the nature and extent of its clothing. . . . The amount of food-yolk once reduced, a return to the older fashion of active young was impossible, and this explains why young of many species hatched upon the ground are as helpless as those reared in the topmost boughs of the highest trees."

Young reptiles are always active at birth, and there is little doubt that the nidifugous or precocious bird is the most primitive type. It is reasonable to suppose that the *Archæopteryx* (a possible progenitor of the Passeres) was nidifugous, but it cannot be known positively that it was arboreal as a breeder; in fact its beak seems poorly adapted for nest-building, (few, if any of our Passerines employ the feet to any extent in that capacity) and there are well known instances of arboricole species of North America (the Yellow-bellied Flycatcher, Black and White Warbler and Hermit Thrush, for instance) descending to the ground to nest.

With accurate knowledge of the condition and early life history of only a limited number of North American birds, it is perhaps somewhat presumptuous to offer serious objection to the Pycroft theories, but my investigations, however superficial and touching only a small angle of the subject, would seem to show here and there an invalid premise or an erroneous conclusion.

Confirmatory evidence of the theory that birds were originally arboreal, would seem to be lacking in the behavior of our birds. In the more than occasional deposition of the eggs of individuals of species normally ground-nesters (the Herring Gull, some Ducks and Geese) in nests high up in trees, and the habitual arboreal nesting of some species of typical terrestrial-nesting groups of nidi-

fugous birds (the Noddy, Wood Duck and Solitary Sandpiper) the inference might be that these species were returning to a former habit, but it seems more reasonable to think that they are governed by a stronger impulse, that of the perpetuation of race in the face of persecution. Many species of the Nidifugæ have been known to feed their young directly, and some species of the Gulls, Ducks and shore birds are capable of carrying or conducting their young safely to the ground. That it is not impossible for nidifugous young to move about freely in an arboreal nursery, is shown by Dr. Beebe in his recent study of the Hoactzin, in which he pictures the downy young climbing about somewhat in the manner of a quadruped. We have little ground for the belief that the elevated nesting habit is more fatal to nidifugous birds than ground-nesting; in fact the death rate of the few arboreal Nidifugæ would appear not conspicuously different from the latter.

On the other hand, brooding birds of species of more or less typical arboreal habits, when directly from their nests, will sometimes flush to the ground to feign a crippled condition, and in so doing would seem to indicate a former ground-nesting habit. There are a few ground-nesting species in many groups of arboreal nesters, and there are more or less instances where members of various arboreal species of remote relationship easily form or resume a ground-nesting habit (the Mourning Dove, Osprey, Long-eared Owl, many species of Sparrows, Brown Thrasher, Robin, and possibly the Flicker) especially where conditions are favorable and molestation at a minimum. Isolated colonies of some of our Egrets and Herons have apparently been ground-nesters for ages, while other colonies of the same species nest high in trees. Some groups as remote as the Sparrows and the Cormorants, Pelicans and Man-o-war, nest indifferently in bushes or on the ground.

On the whole, a careful study of the nesting habits of many species of North American birds, would seem at least to indicate a much more general ground-nesting habit at some former period and that a number of species later

sought an elevated situation to avoid molestation. In the *Alcinæ,* perhaps several species are in an active state of evolution from typical Nidifugæ to a condition of nidicolous habits. The great bulk of the Atlantic, California and Brunnich's Murres, and the Razor-billed Auk, first see light on narrow ledges far above the sea in almost inaccessable cliffs, positions doubtless chosen ages past by the species to avoid molestation; the result is the enforced helplessness of the young for a period of from 25 to 35 or 40 days, until half grown; though normally possessed of considerable strength and activity when only a few days old. Macgillivray gives instances of the extraordinary hardihood of some very small, unfledged young of the Murre, which were observed swimming about in the vicinity of the rocks; chicks that must have had comparatively easy access to the water.

There are no data from which to build a table of comparative values of the yolk in birds' eggs, but my study of the incubation periods of many North American birds, convinces me that the eggs of the Nidicolæ do not always show a relatively earlier hatching period in comparison to the Nidifugæ. Eggs of some species vary enormously in size. I have the shells of some eggs laid by a small domestic hen, averaging 2.92 x 2.26 in inches, comparable to the measurements of the eggs of some of the Megapodes. Some typical Nidifugæ lay eggs of normal size and it is probable that the yolk is proportionally as small as many of the Nidicolæ. It is possible that the egg of the Hummingbird contains yolk comparable in bulk proportional to that of the Murre (both species laying eggs of very large size in comparison to the bodies of the parents) yet there are none more naked and helpless than the newly hatched young of the former, while the nidifugous young of the latter would buffet the sea in a few days were they not literally shelved.

Is a return to nidifugous habits impossible? Who can say in the instance of the Nighthawk and Whip-poor-will, whose young are enabled to abandon the nesting site on the ground within a few hours after birth, whether they are not approaching typical nidifugous habits in the early use

of their feet in conjunction with almost immediate eyesight and the early development of the nervous system?

There can be no doubt that nidicolous habits are not only beneficial in many instances to an arboreal or insular existance, but that they are in time inevitable to that mode of life. However, it is not a special adaptation to a gregarious habit, since so many birds of nidifugous habits also nest in colonies.

It seems to me that a more logical conclusion to the nidicolous habits of so many terrestrial nesters would be attributable to a primitive habit of breeding on islets or cliffs, or in caves, crevices or burrows; insular or elevated situations of any kind chosen primarily for seclusion and found advantageous for the enforced confinement of the young until they became more robust to withstand the elements and avoid their enemies; in countless succeeding generations the temporary disuse of limbs and slower development of some of the sense organs would result in one thing, just as we now observe the beginning of the same phenomena in the enforced sedentary life of the young Murres and Auks. The individual or species unable or unwilling to carry food to their young, would have to conduct them to the feeding ground, seek a more accessible situation for their nests where the precocious young could feed and exercise, or perish. Therefore nearly all sea birds nesting exclusively on small islands are nidicolous. The exceptions include the Murrelets, possibly some of the Longipennes, and the Flamingoes; probably because of the situation of their nests in reference to accessibility to the sea or to a comparatively recent resort to insular breeding. On the other hand, we have documentary proof of the typically nidicolous Gannet nesting upon a rocky islet for upward of six or seven hundred years (*Cf. Gurney, The Gannet, p. 44*) and doubtless it has so nested for untold ages, since it has never been known to nest on the mainland.

Notwithstanding the diagnosis of the Nidicolæ and Nidifugæ by Dr. Newton and Dr. Gadow, the line of demarcation in some instances is exceedingly faint and re-

duced, at least as far as the tyro is concerned, to a question of the sealed or open eye-lids of the young immediately after it has hatched, and even this may prove unreliable in a few instances. It is well known that in most, if not all Nidifugæ, the eyelids separate shortly before the bird is hatched and are wide open almost immediately after birth. Mr. A. B. Howell informs me that according to his observations all sea birds, except the precocial ones, are hatched with their eyes closed, but that they open within a day or so; just how long he is unable to state.

The *Phaëthontidæ, Fregatidæ, Ardeidæ* (at least the smaller species: Least Bittern and Green Heron); *Cathartidæ,* some of the smaller *Buteonidæ* (Marsh, Cooper's, Sharp-shinned and Broad-winged Hawks), Duck Hawk and Goatsucker, open their eyes wide within a day or two after birth. With most nidicolous birds, however, several days elapse between the separation of the eyelids and when they become wide open. In several instances, on the fourth or fifth day after birth, the eyes of the Mourning Dove, Cuckoo, Horned Lark, Brewer's Blackbird, Hooded Oriole, most Finches and Sparrows, Cedar Waxing, some Vireos, Wood Warblers, Mockers, Wrens, Hermit Thrush and Bluebird, are wide open. On the sixth or seventh day: Audubon's Caracara, some Hummingbirds, Pewee, Blue Jay, Red-eyed Vireo, Chickadee and Robin; eighth day, the Gannet, Belted Kingfisher and Crow; ninth day, the Purple Martin; tenth day, the Flicker; twelfth day, the Great Horned Owl and the fourteenth day the Chimney Swift.

Newton affirms that the young of nidicolous birds nesting on or near the ground in exposed situations, remain in the nest a relatively shorter time than those found nesting in less accessible situations. This in general seems to apply to our North American birds as far as known and would seem to infer only an earlier development of the sense of fear and of bipedal locomotion; for though the ground nestling may leave the nest at a relatively earlier age, precocity apparently does not extend to the wings or to the ability to care for itself exceptionally early. With some exceptions, fear develops almost immediately

after birth in our nidifugous young. Professor Herrick has intimated that the instinct of fear appears with comparative suddenness upon certain maturity of the nervous system, and while often premature, it is usually timed to correspond with a sufficiently advanced physical development to enable a retreat from threatened danger. It would seem impossible to discover the precise time of the acquisition of fear by the nestling, through the bungling methods, or rather lack of method, of the past; for fear may be present and remain latent for hours or days before an abrupt movement of the observer or the extreme nervousness of the parent lead to its discovery with startling suddenness, and I believe it is always preceded by the acquisition of sight.

Instinctive fear has been shown on the fourth to the fifth day by some of the Cuckoos and Sparrows; on the fifth to the sixth day by the Least Bittern, Mockingbird and Wren-tit; seventh to eighth day: Green Heron, Long-eared Owl, some of the Vireos, Wood Warblers and Brown Thrashers; tenth day: Mourning and Ground Doves, Red-shouldered Hawk, Cowbird, Catbird, Chickadee, Wood, Hermit and Olive-backed Thrushes and Robin; eleventh day: Cedar Waxwing and Blue Jay; twelfth day: Marsh Hawk and Crested Flycatcher; fourteenth day: Turkey Vulture, some of the Hummingbirds, Bluebird; sixteenth day: Sharp-shinned Hawk; twentieth day: Crow; twenty-first day: Anhinga, California Vulture, Duck Hawk and Magpie; twenty-fifth day: Golden Eagle and Belted Kingfisher; twenty-eighth day: Broad-winged Hawk. The Yellow-billed Tropic-Bird, according to the experience of Mr. Gross, never showed fear at any time.

The production of more than one brood in a season is rather rare among the Nidifugæ, the Grebes, some of the Murrelets and Ducks, the Bob-whites and Scaled Partridges, being among the few occasionally reproducing the second brood. With the Nidicolæ two or more families a season are much less uncommon, though perhaps not so regular as generally supposed; including, as far as known, some of our most abundant and widely distributed species;

among the *Oscines,* only those having an extended and continuous song period; and apparently only in the southern part of the breeding range of the Cuckoos and exceptional colonial species (the northern Cuckoo seldom produces a second brood though it often makes an attempt). The most productive species in point of families include the Tufted Puffin, Cassin's Auklet, Mourning and Ground Doves, Yellow-billed and Black-billed Cuckoos, Pewee, Say's and Black Phœbe, Horned Lark, English, Vesper, Chipping, Field, Song and Grasshopper Sparrow, Slate-colored Junco, Cardinal, Indigo Bunting, Mockingbird, Catbird, Brown Thrasher, House and Carolina Wrens, Robin and Bluebird. Apparently it does not occur to any extent among the lower orders, or the Birds of Prey, Woodpeckers, Kingfishers, Swifts or Hummingbirds, nor regularly in the *Passeres* among the Crows, Jays, Starlings, Grackles, Blackbirds, Orioles, Tanagers, Waxwings, Vireos, Warblers, Wagtails, Creepers, Nuthatches, Titmice or Kinglets.

That some species are more productive than others in the number of broods in a season, is of course due primarily to the prolonged duration of sexual instinct, or in other words, to a continuance of the peculiar physiological condition incident to reproduction, perhaps often repressed in the individual in the united movements of the colonial species, or more often lost for the season by the less dominant species through lessened vitality after a long period of waiting upon the young. The Land Birds included in the above list are birds with the requisite vitality and versatility to adapt themselves to environmental changes incident to civilization, and are among the most dominant species. They are all prompt, hardy nesters, therefore resident or only absent during the colder months, with the possible exception of the Indigo Bunting; all are more or less independent, especially for the earlier nesting site, of a camouflage of deciduous vegetation. For example, the Phœbe with no other advantage over other inornate-nesting Flycatchers, is enabled to produce two or more broods by beginning much earlier than other members of its family, and relining its nest for subsequent broods.

All multiple-brooded species have access to an abundant and unfailing food supply suitable for the young, or are adaptive to a varied and easily obtainable and seasonable diet. Most all feed upon seeds, insects or fruit as occasion requires and are consequently unaffected during seasonal scarcity of any one food. They are all builders of nests of simple construction. I know of no species in the northern part of the United States building an elaborate nest or tunneling in earth or wood for each clutch, regularly producing more than a single brood. They all have the effective assistance of the male, especially in taking charge of the offspring out of the first nest until they can shift for themselves. Finally, they have a brief nesting cycle. It is improbable that a nidicolous species incapable of confining the total period of nest building, deposition, incubation and nestling life to very much over six weeks, can regularly produce more than a single brood in Northern United States, also the nesting season must be brief or the parents will not be in a physiological condition to repeat.

Mr. Alfred C. Redfield carefully measured the work of a Belted Kingfisher nesting in a quarry at Radnor, Pa., April 2–18, 1908, and identified the sex of the excavator once as the female and once as the male.

Here are his notes:

1st day, hole just started
3rd day, about 8 inches deep.
5th day, about 15 inches deep.
6th day, 18 inches deep.
7th day, 23 inches deep.
8th day, 27 inches deep.
9th day, 36 inches deep.
10th day, 44 inches deep.
11th day, 47½ inches deep.
12th day, 51 inches deep.
13th day, 57½ inches deep.
14th day, 59 inches deep.
15th day, 59 inches deep.
16th day, 59 inches deep.

While there was no increase in depth on the last three

days, an accumulation of dirt made it certain that the birds had been working, probably in enlarging the end of the hole for the nest. With a nesting cycle of from two and one-half to three months, this species can hardly be other than single brooded.

Again to show the fine detailed work of some of our observers, I have assembled a table exhibiting day by day the increase in weight (in grams) of some nestlings taken in 1906 by the late John F. Ferry, Lake Forest, Ill. The Cedar Waxwing study (Aug. 20-28) is incomplete, but the development and length of nestling life of the Cowbird (June 11-22), Yellow Warbler (June 21-July 2) and Wood Thrush (June 11-22), exhibit a relatively slower growth, considering size, than the Catbird (June 13-24) and the Brown Thrasher (July 8-19).

	1st Day	2nd Day	3rd Day	4th Day	5th Day	6th Day	7th Day	8th Day	9th Day	10th Day	11th Day	12th Day
Cowbird				7.7	23.3		24.9		31.1	28.0		**
Cedar Waxwing	2.2	3.0	4.5	8.0	7.7				*			
	3.0	4.0	6.5	13.5	12.5	15.5	13.0		*			
	4.0	5.4	8.0	17.0	15.0	20.0			*			
	3.1	4.9	8.0	17.0	15.5	19.0	16.0		*			
Yellow Warbler				7.8	8.0	8.3	8.5					**
				6.2	7.2	8.3	7.3	7.7	9.4			**
Catbird		4.6			18.6	23.3	23.3	29.5	31.1	31.1	**	
av. 3 young	3.1	6.2	15.5	15.5	15.5	22.0	25.2	27.2	28.5	**		
Brown Thrasher	6.0	7.5	9.0	12.0	17.5	21.2	25.5	40.5	51.5	47.5	49.5	**
	8.2	9.5	13.0	17.0	23.5	28.2	35.0	38.0	45.0	39.0	42.5	**
	6.5	8.5	11.0	15.5	22.0	27.5	34.0					**
Wood Thrush	3.1											
			6.2	18.6			24.9		37.3	34.2		**

* Found dead. ** Departed.

[TO BE CONTINUED]

NOTES ON THE HABITS OF THE BREEDING WATER BIRDS OF CHATHAM COUNTY, GEORGIA

BY W. J. ERICHSEN, SAVANNAH, GA.

With few exceptions, which are properly noted hereinafter, these notes are based wholly on my observations in Chatham County, Georgia, during the years 1909-12 and 1914-19, all inclusive. While it is believed that every water bird that breeds or has ever bred in the county is here recorded, only those species of which the eggs or young have been taken are included.

I deem it unnecessary to give in this introduction an extended account of the physical aspect of the county — although such would not be out of place here — since the reader will find in the accounts of many species numerous references to and descriptions of their habitat, which at least give some idea of the topography of portions of the county. As the reader will, of course, infer from some of these accounts, Chatham County is situated on the coast, being the northernmost coastal county in Georgia. Its breeding water-bird life is neither greatly varied as to species nor abundant as to individuals, and on account of the somewhat inaccessibility of the nesting haunts of most species, my knowledge of the life-histories of several species is not extensive. In most cases where my own notes are lacking, the deficiency has been supplied by Troup D. Perry of Savannah, a veteran oologist, to whom grateful acknowledgements are due. Mr. Perry and I have been inseparable companions in the field for seven years. To G. R. Rossignol, also of Savannah, I am under obligations for assistance rendered in securing breeding data, even though such assistance was given me indirectly. I have accompanied Mr. Rossignol on many expeditions to the breeding haunts of water birds, and many times have enjoyed his hospitality at his summer home on Wilmington island.

With this brief introduction the author presents to the reader the following more or less fragmentary notes

on the habits of the breeding water birds of Chatham County, Georgia.

Sterna antillarum — LEAST TERN.

This beautiful tern formerly nested in great abundance on the isolated beaches of the larger coast islands, but since 1891 no eggs have been taken in this county. On my visits to the islands during the past five years I have noted Least Terns in increasing numbers, but I have so far failed to secure evidence that they have reëstablished themselves upon their former breeding grounds. The aspect of most of the beaches where they once nested remains unchanged, and hopes are entertained by local bird students that the birds will continue to increase and return to their old haunts. Commencing in late spring and continuing through the summer, numbers of these dainty birds may be seen fishing in the waters of Tybee inlet, but it is my belief that these individuals have merely wandered here from their breeding grounds to the north or south of this county. Long before I began the study of ornithology this species had ceased to breed in this locality, and for the following notes on its breeding habits I am indebted to T. D. Perry, whose experience with it is probably more extensive than that of any other Georgia ornithologist. From 1885 to 1890 large numbers of Least Terns annually resorted to the unfrequented beach of Warsaw island to rear their young. Although the birds were pretty evenly distributed over the entire five mile beach the most favored portion was near what is known as the "middle settlement," the name of which is explanatory of its location on the island. Mr. Perry tells me that at that time the beach at this point was wide; large areas of suitable shell-strewn sand being available for nesting sites. Most of the birds preferred that portion of the beach between high water mark and the sand dunes where numerous little tufts of vegetation were growing, affording protection for the young not only from the hot mid-day sun but from their numerous enemies as well. The eggs, usually three in number were deposited in a slight depression in the bare sand.

Very rarely was there noted any attempt at concealing the eggs, although occasionally a set would be found lying at the base of a tuft of beach grass and partially shaded by it. Laying usually commenced the first week in June, and by the 15th of that month the breeding season was at its height. The first of Mr. Perry's several visits annually to Warsaw island was never made before the 10th of June, and he informs me that a number of times he has secured fresh eggs late in the month of July. Although he never fully determined how many broods were raised in a season, he is of the opinion that there was only one. Most authors agree on the subject that unless there is a mishap to the eggs only one set is laid. Their ground color varies from pale grayish-green to light olivaceous-drab; often it is clear buffy. The spotting consists of dots and splashes of brown and lilac, and is usually well distributed over the egg, although it frequently tends to form a wreath around the large end. In size the eggs average 1.25 x .95. These birds are very solicitous for the safety of their eggs and young, greeting the intruder with shrill cries and much circling overhead. The young, like those of all beach nesting birds, are adepts at hiding, their color blending so perfectly with their surroundings that once the eye is taken off them great difficulty is had in locating them again, even though the observer marks the spot where they lie. As soon as they are able to fly, the young, in company with the adults, resort to the sounds and inlets, where, at this season of the year, they obtain an abundant supply of food.

Since this species lately began to increase in numbers in this county, I have been much interested in studying its feeding habits, and, while it continues as formerly to show a preference for the larger bodies of water, I often observe it singly or in pairs fishing in the numerous narrow creeks and rivers that thread their way along this coast. In Tybee inlet there are numerous shoals more or less disconnected but together covering a wide area. Many of these bars are uncovered at low tide, but a number are perpetually washed by the breakers rolling in from the

sea. These waters teem with small fish, besides numerous other forms of aquatic animal life, and upon these Least Terns feed to a large extent. When fishing in these shallows the birds usually fly close to the surface, and their movements when plunging into the water are quick, and, although their speed is slightly checked before they reach the surface, there is always much splashing.

About the time that Least Terns were nesting so abundantly on Warsaw island Mr. Perry also secured a few sets of eggs on Folly island, one of the numerous small hammocks having a beach, lying between Tybee and Warsaw islands. Until 1914, this island, which is not easily accessible, had not been visited by any local ornithologist in a number of years. With hopes of finding a few pairs of birds nesting there Mr. Perry and I visited it on May 17 of that year. However, its sharply sloping, semicircular beach was deserted, indeed the only wild life that we saw upon the entire island was a number of young Marsh Rabbits (*Sylvilagus palustris*).

Rynchops nigra — Black Skimmer.

I have been unable to find the breeding grounds of this species on the coast of Chatham county. I doubt if it now breeds here, although it certainly did in considerable numbers fifteen or twenty years ago. T. D. Perry informs me that he has taken its eggs on Pelican Point, a key lying some distance off the south end of Tybee island. Unfortunately, Mr. Perry's note books containing data on this species have been misplaced, and he is unable to furnish me with dates. The tides now daily cover Pelican Point, resulting in its almost total disappearance. Of interest to me since the commencement of my study of ornithology on the coast of Georgia is the rapidly changing aspect of the sand banks that stretch in almost unbroken succession from the south end of Tybee island to Beach hammock in Warsaw sound, a distance of five miles. The periodical building up and disappearance of these banks undoubtedly accounts for the scarcity and non-breeding on this coast of this species, as it is unable to establish itself. Every summer I see a few

Skimmers on these banks, but they certainly do not breed there. Mr. Perry informs me that on Pelican Point the eggs were deposited upon the bare sand, the birds often breeding in close proximity, sometimes only two or three feet separating some "nests." The eggs were oftenest four in number, although frequently only three were laid, and occasionally sets of five were found. The ground color is creamy white; occasionally pure white, although this may be due to fading as this description is taken from specimens in the collection of Mr. Perry. The markings vary greatly, but the average egg is heavily spotted and blotched with blackish-brown; the spots are usually of irregular size, but always quite sharply defined, and are generally well distributed over the surface. The eggs average 1.75 x 1.35 in size.

These birds are very active during the early morning hours, feeding in the shallows of Tybee inlet as well as the larger rivers flowing into it. On May 17, 1914, T. D. Perry and I visited Folly island in quest of eggs of the Least Tern (*Sterna antillarum*), this trip being referred to in the account of that species. In order to gain access to this island it was necessary for us to either go outside and row a considerable distance through the breakers or await a high tide and laboriously push our boat through a long four foot wide canal that had been dug by trappers. We chose the latter route, and arriving at six p. m. of the 16th near the head of this canal we found that we would be compelled to camp upon a nearby small hammock until three a. m. when the canal would contain sufficient water to float a boat. After many difficulties we finally gained the river at the mouth of which lay our destination. The first gray streaks of dawn were just appearing in the east when the Skimmers made their appearance on the river, skimming the surface of the water often only a few feet from our boat. With the rising of the sun the birds deserted the river and retired to the outlying sand bars, there to stand and sun themselves for long periods. Although when resting they strictly confine themselves to the outer sand banks, at rare intervals I have seen individuals alight

on the mud flats closer inshore. This species apparently is becoming more and more uncommon on this coast, and a few years will no doubt see its total disappearance.

Anhinga anhinga — WATER-TURKEY.

Undoubtedly this curious bird once nested in considerable numbers in this county. The degree of its abundance now however can best be expressed by the term "sparingly and locally distributed." The extensive and splendid system of drainage inaugurated in the county some years ago has almost completely obliterated the former haunts of the Water-Turkey. As it is eminently a fresh water species, the draining of the ponds and swamps has forced it to seek nesting places elsewhere. T. D. Perry informs me that several years ago a friend of his secured several sets of eggs near Burroughs, a station on the Atlantic Coast Line railroad eleven miles southwest of Savannah. The birds were nesting in willows growing in an abandoned rice field reservoir.

The nest of the Water-Turkey is usually placed at low elevations but always over water. The eggs, usually four in number, are deposited the first week in May. According to my observations made at other points on the coast of Georgia, isolated nests are more often found, and even at localities where the species is abundant, the birds do not breed in large colonies, six or eight pairs being the most that I have observed nesting in close proximity. The nest is composed of sticks and is generally of large size, often measuring eighteen inches in diameter. The depression, however, is slight, sometimes imperceptible. Eggs, bluish white, covered with a rough chalky or calcareous deposit. They measure, on an average, 2.20x1.25.

These birds spend much of their time feeding in isolated ponds in which there is an abundant growth of aquatic vegetation. They prefer such bodies of water that are surrounded by heavy forests, although they frequent in considerable numbers the almost treeless fresh water marshes and abandoned rice fields if containing a good depth of water. I never saw one seek safety by skulking

in the dense vegetation. They depend, as far as my observations go, upon their swimming powers, or else take wing; usually the latter. They generally swim with the body wholly submerged, only the head and long neck showing above water. They are at all times very shy and retiring, and, occurring as they do only in the wildest and most thinly settled localities, are every year being pushed further away from this section by the draining and cultivation of their retreats.

Aix sponsa — Wood Duck.

No more fascinating scenes of natural beauty are to be found anywhere in the south than those presented to view at each turn as one travels up or down the sinuous course of the Ogeechee river from its mouth to the northwest corner of Chatham county. At many points along this stretch the river overflows its banks on both sides, the water reaching far back into the heavy deciduous forests, forming perpetually flooded swamps, most of which are impenetrable. Long stretches of the river are bordered by great trees drooping under their gray burden of tenuous moss, their foliage dipping into the black water which is rendered apparently darker by the shadows cast by the fringe of trees. At numerous points high, sandy bluffs, almost bare of vegetation take the place of the gloomy swamps. Here and there along the banks ancient stumps protrude, and in many places abandoned rice plantations stretch for miles along either side. The wooded portions of the swamps bordering this river are the home of the beautiful Wood Duck, which, while it formerly occurred in large numbers, is now so rare that it is only occasionally met with. I can say nothing of its habits during the breeding season from personal observation; furthermore I am not aware that its eggs have ever been taken in the county. However, T. D. Perry tells me that he has seen young at several localities, both in the nest and following the parents, although not recently, since the species is now nearly exterminated. He says the birds always built their nests in hollows in tall trees growing in or very close to

water, to which the old birds transported the young in their bills. He has seen young very early in April but a few days old. After they are hatched the adults lead them to nearby rice field reservoirs, where they remain until nearly grown when they return to the heavy timber along the streams.

Ixobrychus exilis — Least Bittern.

The data that I have secured on the nesting habits of this pecies is very meager. It is a summer resident only, but on account of its retiring habits the times of its arrival and departure are not well known to me, and the fact that it breeds in the county has only recently been ascertained. In 1915 I accompanied G. R. Rossignol and Frank N. Irving on a visit to Ossabaw island. We landed on the north end in the late afternoon of May 10, and the following five days were devoted to a study of the bird life of the island. Our attention was directed particularly to the long established colony of herons in which a number of pairs of the now rare Egrets (*Casmerodius egretta*) and Snowy Egrets (*Egretta candidissima candidissima*) had found refuge. This rookery is in a large fresh water pond in which we spent two days full of interesting experiences.

Situated in the middle northern portion of Ossabaw island, a coast island nine miles long and five miles wide at its widest point, this pond, created by the flow from an artesian well, annually furnishes a winter home for wild fowl and a summer home for many species of water birds, besides those land birds partial to such an environment. Its area covers very nearly two acres, although about one-third of it apparently is unsuitable as a nesting environment for any species of bird except Red-winged Blackbirds (*Agelaius phoeniceus phoeniceus*) which were present everywhere in the pond. This portion is the marginal strip and is about fifty feet wide. Beginning at the edge of the pond and extending toward its center for a distance of approximately one hundred and fifty feet there are dense growths of cat-tail flags, wampee and pond lilies, interspersed with small patches of saw grass. Each of these species of vegetation grows in separate and well de-

fined areas, although no one of them is restricted to any particular section of the pond. They together cover its entire area with the exception of a few open spaces of deep water in the center. As this is neared the vegetation lessens in density, and willows, none over ten feet in height, and seemingly insecurely rooted in the soft ooze, make their appearance. In summer these frail trees are taxed to their limit to support a burden of nests of six species of herons. The surface of all areas of open water is covered with a species of pond weed pea green in color. At first glance this greenish growth appears to be that which collects upon the surface of stagnant water, but such is not the case. An examination failed to disclose any outlet to this pond. The fact that the water is clear and nowhere stagnant would seem to indicate that there is an outlet which we overlooked; indeed, when it is understood that a large volume of water from the well daily flows into the pond, it can readily be seen that it is necessary that there be an outflow, since the water retains some of its original purity. Immediately surrounding the pond are narrow fringes of stunted oaks of several species, and a few rods further back begin coniferous and deciduous forests that extend for several miles in all directions.

Our first exploration of this pond was made afoot on May 11, the day after our arrival on the island, in a heavy downpour that continued throughout the day and night and well into the following day. We had as companions, in addition to the birds, swarms of Cotton-mouthed Moccasins and a number of alligators, the latter mostly of small size. We encountered no water over four feet in depth, and wading in the open pools, while extremely unpleasant in the continual downpour, was not attended by great difficulty or danger. Our progress through the dense masses of vegetation, however, was slow and difficult, for in their recesses lurked many poisonous moccasins for which it was necessary that we be ever on the alert. On the 14th, through the courtesy of Mr. Sasser, the overseer of the island, we were enabled to avoid a second exploration on foot. Mr. Sasser kindly allowed us the use of his horse

and wagon to haul a light skiff to the pond, a distance of four miles from his house, at which we were staying. Launching the boat through the dense vegetation, a distance of over one hundred feet, was exceedingly difficult. The weather however was fine, and every minute of our stay in the pond was used to advantage. Although our second visit was unproductive of finding nests of species additional to those noted on the 11th, we did secure much further data on the nesting habits of the herons, some of which will be given in the sketches of the various species.

Two nests of the Least Bittern were found in this pond; one on the 11th, containing three heavily incubated eggs, and one on the 14th containing one egg. These nests were built in cat-tail flags and were composed of the dead stalks and blades of the different species of vegetation growing in the pond. They were placed only a few inches above the surface of the water and were well concealed, the tops of the flags rising two or three feet above the water. They were simply shallow platforms, apparently hastily constructed, the depression being barely noticeable. The set of three eggs collected is now in the collection of G. R. Rossignol. They are pale bluish white and average 1.25x.90. I believe that Least Bitterns breed in considerable numbers in this pond, but on account of the rank growth of vegetation covering nearly its entire area I was unable to explore it thoroughly and only the two nests mentioned above were found. I very rarely caught sight of one of the birds, so successful were they in hiding in the tall reeds.

Only a small percentage of the Least Bitterns that migrate along this coast remain in this section to breed. In both spring and autumn numbers of them frequent the salt marshes, becoming very active at night-fall. I doubt if any of the few pairs that remain here to breed ever nest in these marshes, but retire to the isolated fresh water ponds on the larger islands, where they are seldom molested.

Ardea herodias — Great Blue Heron.

This picturesque bird is moderately common but

breeds only in the heavily forested areas of the larger coast islands. I am informed that it formerly bred in some numbers on Little Tybee island. The huge nests were placed near the extremity of the topmost limbs of giant short leaf pines and most of them were inaccessible. I am not aware of the present location of any heronies; indeed this species has long since ceased to breed in any numbers in this vicinity, therefore I am unable to offer much information concerning its nesting habits. With its behavior in autumn and winter upon its feeding grounds in the marshes and on the mud flats I am better acquainted, since it is much more abundant, or apparently so, during the above named seasons. I find it to be, as a rule, very shy and ever on the alert, which is really surprising, in view of the fact that it has so few enemies to contend with.

The greater portion of its food is secured from the salt marshes and the banks and shallows of the numerous creeks that wind their way through them. It is often seen in company of the smaller herons, particularly the Little Blue species. At such times it is the first to take wing at the approach of danger, and usually is far away before the intruder has arrived within a hundred yards of the spot where it stood. Upon stationing itself in a shallow creek to secure passing fish, if the latter are scarce the bird will remain motionless in one spot for a long period of time; apparently sluggish, and in an indifferent attitude; but when fish are plentiful, it becomes very active, spearing them right and left in rapid succession.

At sundown, or a little before, numbers of these stately birds can be seen slowly winging their way toward the forested portions of the islands, there to spend the night. They become much attached to these roosting places and will not desert them as long as their aspect remains unchanged and the birds are not greatly persecuted.

Casmerodius egretta — EGRET.

Of all the herons which nest in this county this species is the most beautiful and interesting, as it is the least abundant. The very few pairs that are left to breed un-

molested are confined to a fresh water pond on Ossabaw island, or at least apparently so, as I am not aware that it is known to nest at any other locality in Chatham county. The number of pairs which were breeding in this pond was not accurately determined during my visit to Ossabaw island in May, 1915. I saw ten or a dozen birds, and allowing for those which were temporarily absent from the rookery, I believe the number of pairs is very close to the former figure. The nests were built in willows, usually at a point where several stout limbs converged, and were bulky platforms of twigs loosely laid together. They were placed at heights ranging from two to ten feet above the surface of the water. All of the nests which I examined contained three eggs and the sets which were collected were about six days incubated. These herons were very shy, leaving their nests before I had approached to within two hundred feet of them, and would not return to them so long as anyone remained in the pond. However, no difficulty was experienced in determining which nests belonged to this species, as its eggs are unmistakable, being considerably larger than those of any other heron nesting in this pond. They are bluish green in color and measure 2.25x1.50.

Information secured from T. D. Perry, whose collecting activities extend over a period of nearly forty years, tends to convince me that this species never nested in this section in large colonies such as formerly occurred in Florida and along the Gulf coast. The absence of fresh water reservoirs, to which it was almost exclusively confined during the breeding season, evidently was the main cause of its comparative scarcity. Its numbers have been much reduced in recent years, and it is now threatened with extinction. Because of the rarity of this species and the next it has not been possible for me to determine the times of their arrival and departure. However, they are summer residents only.

Egretta candidissima candidissima — Snowy Egret.

Between eight and twelve pairs of these lovely birds

were nesting in the pond on Ossabaw island at the time of my visit there in May, 1915. Because of the similarity between their eggs and those of some other species of herons breeding there, it was not possible for me to accurately determine which nests belonged to these herons except by remaining concealed until the birds had settled on them. This required considerable patience, as, although they were not as wary as the larger Egrets, after I had entered the pond and frightened them from their nests, long waits in concealment were necessary before they would return. All of the nests that were identified were built in willows in which were placed many nests of the other species of herons which were breeding in the pond. They were simply rudely constructed platforms of twigs loosely arranged in a circular manner. The eggs were three in number, bluish green in color. They measure about 1.80x1.25.

I made a number of efforts to determine the character of the food of this species, but the data secured is meager, due chiefly to the difficulty in approaching the birds close enough for satisfactory observation. Besides this the very few pairs nesting in the pond distributed themselves, when feeding, over the large swampy and marshy areas on the island, and were rarely encountered. The limited notes secured lead me to believe that a considerable percentage of their food consists of crawfish, while individuals were detected on several occasions catching small fish swimming near the banks of the small creeks.

This species does not breed at any other locality, although suitable ponds exist on some of the other large and isolated islands. During the past ten years this species has rapidly decreased in numbers and it is now rare in this county.

[TO BE CONTINUED]

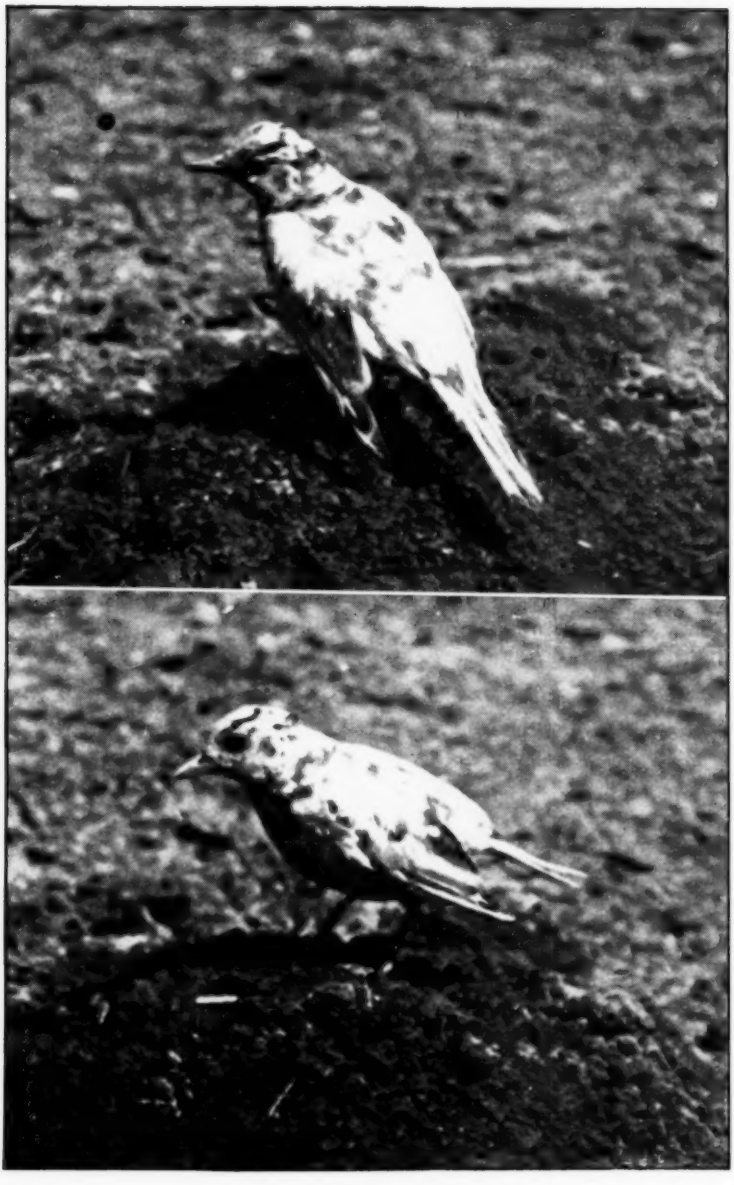
AN ALBINISTIC ROBIN

ALVIN R. CAHN

While albinism, or a tendency toward albinism in birds is common enough to have supplied most museums with stuffed or mounted specimens showing varying degrees of whiteness in many species, it is rare enough to have escaped the efforts of most of the hunters who have substituted the camera for the gun. It is for this reason, and not because albinism is a rarity, that the two accompanying photgraphs of a strikingly albinistic robin are offered.

This robin appeared on the campus of the University of Wisconsin on March 5, 1917, and remained there during the entire summer, in spite of the fact that it was among the very earliest of the robins to return in the spring. An examination of the photographs will show that the bird is fully 85% white. Those pigmented feathers which were present were for the most part normal in color, though the few brown feathers on the breast were somewhat pale in color, and the bill and legs were nearly white. The bird was a female and was seen to mate with a normal male. Two unsucecssful attempts were made to nest. The first nest contained five eggs, the second four. Both were deserted for some unknown reason before the incubation period had expired. A subsequent examination of the eggs showed three of the second batch fertile, and two of the first.

Texas A. and M. College,
College Station, Texas.



AN ALBINISTIC ROBIN

THE WILSON BULLETIN

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Additional comment on the annual meeting after the reading of the report of that meeting by the Secretary seems almost superfluous. But the writer has followed the course of the Club from its beginning, and he may, therefore, be permitted to remark that this meeting left him with the conviction that whatever of uncertainty there may have been in the past about the continued functioning of the Club its future is now secure. Such a spirit of good fellowship, mutual understanding of differing points of view, and such earnestness in the work of accumulating facts relating to our particular field of endeavor can mean nothing else than increasing value of the results of our work. And let us begin now to plan to make the next meeting better than our best so far.

The creation of a board of coöperating editors was one of the most significant and valuable actions of the last meeting. This first number of the new volume illustrates this point. It not only lightens the task of editing but insures material of a higher character to choose from, and adds a more personal touch to our journal. Each of these coöperating editors would ask for your coöperation in securing material for publication. This is probably even more true of the Secretary, upon whom falls the task of preparing the more personal material. You would be doing him a service of you would not wait for him to ask you for items of interest, but would keep him informed of trips or journeys which you have planned, or any such which you know others have in contemplation. You would also be doing the readers of the Wilson Bulletin a service, because everybody wants to know what is going on in the way of bird study.

It was voted to advance the subscription price of the Wilson Bulletin to $1.50 a year to non-members. All members, whether Associate or otherwise, receive it free, if their membership dues are paid up. This action was necessary because the cost of four numbers exceeds a dollar, and because there is no immediate prospect of any material reduction in the manufacturing costs in the printer's trade. It is true that there has been a small decline

in the price of paper, but paper is a small item in the cost of manufacturing printed matter.

Your special attention is called to the statement of the Committee on Ways and Means, in this column. Parallel with this effort of this committee is that of the Secretary, with his teams of helpers, in soliciting new members. Upon the response to these efforts depends to a large degree the character of your official organ. Present expectations of income make possible a 200 page volume with a few illustrations. A 50% increase would mean a 300-page volume, with more illustrations, including at least two colored plates. If every member should get one new member this would be accomplished. Haven't you some friend who ought to become a member, and probably would if you asked him to?

From the Ways and Means Committee.

Your Ways and Means Committee would like to make a brief statement to the Club on its recent activities. In response to the circular letter sent out to the membership under date of January 25 $232.00 has been received to date, from which $13.00 must be deducted for expenses We wish to thank the contributors for their generous support. In due time the money will be turned into the treasury of the Club and applied to the expense of publishing the Bulletin. The fund will be held open for a while longer, so that those who desire may still send in contributions. The Club is conducting a well organized drive for increasing the membership. A larger and better illustrated Bulletin will help greatly in this enterprise, and conversely, the larger membership will support the better periodical. Your contribution is asked at this time to help bring about this happy equilibrium.

Those who do not wish to make direct contributions are invited to accept classification as active or sustaining members. If a considerable number of associate members would volunteer to become active members the increased income from the dues would make a great difference in the Club's budget. Any associate or active member will likewise be welcomed as a sustaining member. Concerning these changes in classification please notify the secretary, Mr. A. F. Ganier, 2507 Ashwood Avenue, Nashville, Tenn., or the treasurer, Mr. Geo. L. Fordyce, Youngstown, Ohio.

Respectfully,

B. R. Bales.
M. H. Swenk.
T. C. Stephens.

March 1, 1921.

FIELD NOTES

An Albino Goldfinch.

During August, 1915, I observed an albino bird a few miles west of McCook, Neb. By following the bird, observing it with glasses, and observing its flight I identified it as a goldfinch. Having never seen the record of an albino goldfinch I consider this worth while reporting. There seemed to be no color in any of the plumage.

DAVID C. HILTON.

Notes from North Carolina.—A Tree Sparrow (*Spizella m. monticola*) came to my feeding station on January 27 and stayed through January 30. This was following a heavy snowfall for this region on the night of the 25th. The tree sparrow has been recorded but rarely from the mountains of North Carolina, and once from Chapel Hill, near the center of the state. While this was only a sight record I feel sure of my identification, for I was perfectly familiar with the bird in northern Ohio, where it was one of the commonest winter birds, and this specimen was observed on several occasions at less than six feet.

According to Pearson, Brimley and Brimley, "The Birds of North Carolina" (1919) the Starling (*Sturnus vulgaris*) has not yet been recorded from North Carolina, although it has been recorded from Newport News, Va. It seems worth while, therefore, to record the following note. Messrs. R. W. Collett and W. F. Pate, while hunting near Willard, N. C., about December 19, 1919, saw a flock of three strange birds and shot into the flock, securing one specimen, which was brought to me for identification, and which proved to be a Starling. This specimen is now preserved in the North Carolina State Museum. Willard is located about 33 miles due north of Wilmington, N. C.

Z. P. METCALF.

West Raleigh, N. C.

Do Birds Remigrate?—Living as I do so near the border land between Northern and Southern bird conditions, I am led to believe that there is an extensive intermigration among certain species of birds in winter and early spring. a bridght day in winter I have often seen 75 to 100 Robins, while after a severe storm I would not see even one for two or three weeks. The Bronzed Grackle does not remain here through the winter, but is very abundant at Nashville, Tenn., only 75 miles south of here.

Ordinarily it appears here in numbers by February 15 to 22, the earliest record I have being February 8. In the spring of 1920 the grackles were plentiful by February 26, when the coldest weather of the season came, lasting until March 8. I am strongly inclined to believe that they remigrated, for in that time only two or three were seen, and they did not again become common until March 12.

I have never noticed this condition about the birds which come in late March or the early days of April. Regardless of Easter storms, late snow flurries, or long-continued cloudy, cold weather, the Chimney Swift and Purple Martin stay, even though I fear they often approach starvation.

GORDON WILSON.

Bowling Green, Ky.

Freakish Nesting Habits.—Of the 45 or 50 birds which are regular summer residents here four or five have odd habits choosing sites for nesting. While the migration is on I have found a few Prairie Warblers in several localities in the territory I have studied, a circle about eight or nine miles in diameter, with Bowling Green as its center. In nesting time, however, I have never been able to see the Prairie Warbler outside of a little side valley opening into the valley of the Big Barren River and about three miles from town. Many other places around here have the same general characteristics: shrubby fields, brier and honeysuckle tangles, with wooded hills in the background, but no other place seems to please the Prairie Warbler.

The Bachman Sparrow is a little less choice about its nesting grounds, but I have been unable to find it in the nesting season except in three places, two of them fairly near each other, but more than three miles from the other one.

The range of hills overlooking the valley where the Prairie Warbler nests is the only breeding ground I know of the Kentucky Warbler, though there are dozens of hills near here very similar to this range.

Another bird which belongs to this group is the Oven-bird, which is confined to the range of hills mentioned above, and another, three or four miles from the first and across the river from it.

This season I intend to investigate this as one of my problems and hope to arrive at some conclusions concerning this unique habit among these species.

Bowling Green, Ky. GORDON WILSON.

Notes from Lake County.—I am pleased to record an occurrence of the Double-crested Cormorant on October 9, 1920. As I

mounted the stones of a breakwater at the lake and looked down on the other side, I was surprised beyond measure to see an immature of the species seated on one of the lower stones just below me. After a sufficient study of the bird I had a difficult time in driving it far enough out into the lake to have it escape the shot of the first hunter that happened along, as its perch was not twenty feet from shore. Looking back afterwards I saw it swim back and fly up to its original rock. Later on some fishermen succeeded in driving it far out on the water, and as it could not be located the next morning, I trust it escaped the fate usually meted out to any large or strange bird.

On August 10, 1920, while watching the Bronzed Grackles winging leisurely along to their roost in long extended flocks of hundreds, and the Cowbirds in swifter, undulating bunches like bands of galloping outlaws, a bunch of twenty "black birds" passed by whose short tails, swift flight and perfect unison of movement of the members of the flock made me at once suspect them to be Starlings. Visiting the roost itself an evening or so later a few were seen and readily identified, but I find it difficult to approach the more easily frightened Starlings among the thousands of Grackles and Cowbirds. Early in October I tried the expedient of climbing a tree in the roost and looking down upon the thorn trees as the birds settled in for the night. This was highly successful and I got excellent views of many of the birds, now in winter plumage. Towards dusk, when patterns were more obvious than colors, the Starlings had a striking resemblance to undersized Flickers. This was also remarked upon later by a friend who also visited the place. It was impossible to obtain any exact count of their numbers, but there were surely between fifty and one hundred; which seems to say that the day is not far distant when the Starling will be a common Ohio bird.

E. A. Doolittle.

Painesville, Ohio.

Fall Migration in Northwestern Nebraska in 1920.

With a view to continuing the observations on the fall bird migration begun in September, 1919, in northwestern Nebraska, Mr. C. E. Mickel and the writer returned to the Monroe Canyon region of Sioux county, Nebraska, on September 26, 1920, and remained until October 9. During this period sixty-one species were recorded. Since only sixty-eight species were recorded the preceding year during the more favorable season, September 6-20, we considered the list rather good. Some of the more interesting observations follow:

Mountain Plover: On September 27, while crossing a strip

of badlands north of Monroe Canyon our attention was suddenly arrested by a Mountain Plover standing motionless on the bare ground near our pathway. The bird harmonized so remarkably well with the pallid, buff-colored soil that we congratulated ourselves upon having discovered it. Doubtless depending instinctively upon its resemblance to its surroundings for protection, the bird remained absolutely motionless as we approached. Since there are but a few definite records of this species for Nebraska the specimen was collected.

Red-naped Sapsucker: A specimen was collected on September 29, and oddly enough, from the identical tree, an old boxelder, that yielded the state record specimen which was taken the year before and recorded by Mr. Mickel in the September, 1920, number of The Wilson Bulletin. A second individual was noted on October 4.

Lewis Woodpecker: It has been the privilege of the writer to spend from two to three weeks in camp in the Pine Ridge Region of northwestern Nebraska for several years, namely, 1905, 1908, 1911, 1912, 1913, 1919, and 1920, with the seasons varying from June 15 to October 9. On all of these trips at least a part of the time has been devoted to bird study, but not until the past season did he succeed in finding the Lewis Woodpecker. On September 29 a family of six or seven birds was observed among the pine trees at the head of Monroe Canyon. While possibly a common migrant and winter visitor, the Lewis Woodpecker probably does not nest as commonly within the state as we have supposed.

Clarke Nutcracker: A single specimen was noted on October 6.

Sparrows: The sparrow migration was both a surprise and a disappointment, not only because of the small number of species present but because of the relative scarcity of individuals. The species noted were as follows: Western Vesper Sparrow, fairly common; Harris Sparrow, a single specimen seen October 3; White-crowned Sparrow, one seen September 30; Gambel Sparrow, the prevailing species, seen nearly every day; Western Chipping Sparrow, fairly common on the pine-covered bluffs; Clay-colored Sparrow, noted on four different days, one or two birds at a time—a striking contrast to the great abundance of this species in the same locality the preceding year in middle September; Lincoln Sparrow, two individuals noted, one on the 4th and one on the 5th of October. Like the sparrows Juncos were surprisingly scarce, although several species were noted, namely, White-winged, Slate-colored, Shufeldt and Pink-sided.

Western Tanager: A few Western Tanagers lingered until October 1, which seemed to us a very late date.

Warblers: Two interesting warblers for a locality so far to

the west were noted, the Black-throated Blue on October 6 and the Black-throated Green on October 8.

Sprague Pipit: This species is regarded as sufficiently uncommon in Nebraska as to make the collection of a specimen on October 1 seem worthy of note.

Sage Thrasher: A single specimen was seen and collected in the sage brush a few miles north of the mouth of Monroe Canyon on September 27. But few definite records of the Sage Thrasher are at hand for Nebraska, but it is believed to occur regularly in small numbers in the badlands of Sioux county.

R. W. Dawson.

Lincoln, Nebraska.

The Present Status of the Whooping Crane.

There seem to be no published records of the occurrence of the Whooping Crane since the note recording the taking of specimens at Wood Lake, Cherry county, and Grand Island, Hall county, Nebraska, was published in The Auk, 1913, page 430, by the writer, hence the following notes possess considerable interest, especially as the suspicion has been expressed that possibly the species had become extinct.

On March 29, 1919, a small flock of Whooping Cranes was seen near Kearney, Buffalo county, Nebraska, on an island in the Platte river. In company with Mr. C. A. Black of Kearney, the writer interviewed the observers, who are wholly to be relied upon, a few hours after the birds were seen. The "white cranes" (= Whooping Cranes) were in a large flock of "blue cranes" (= Sandhill Cranes), but had departed upon our reaching the place late in the same day, though most of the smaller species remained. In the spring of 1920, Mr. C. A. Black, who is an able and wholly reliable field ornithologist, saw two Whooping Cranes in a flock of Sandhill Cranes flying northward at a considerable height, at Kearney, on April 2, and on April 14 he saw a flock of 56 Whooping Cranes at the same locality.

Since the publishing of the 1913 note above referred to, there have been several Whooping Cranes killed in Nebraska, according to reports. On March 10, 1915, one was killed at Ogallala, Keith county, and is now in a private collection at that place, and in the fall of 1915 two were shot on the Platte River in Hall county, north of Prosser, but were destroyed by fire in 1917; in the spring of 1917 one was shot near Minden, and is in a collection there, and in the fall of that year it is reported that three were killed near Kearney (by a hunter who buried the birds through fear of the law) and another along the Platte, somewhere near its mouth; finally, in the spring of 1918 six were seen on the Platte river near Kearney, by a very reliable hunter, who, to his credit, abstained from

killing any of them, while others were reported as seen in the fall of that year. In the case of birds killed since the approval and promulgation of the Migratory Bird Treaty Act it has not been possible to get any reliable information about specimens reported to have been taken.

MYRON H. SWENK.

Lincoln, Nebraska.

Nesting of the Red Crossbill in Nebraska.

On March 28, 1920, Messrs. Miles Greenleaf and William Marsh, both of Omaha, found a nest of the Red Crossbill in Elmwood Park, in the western part of Omaha. The nest was in the crotch of a decayed boxelder tree in a well-protected ravine at a height of about twenty feet from the ground. The female crossbill was on the nest, evidently brooding, and the male bird was feeding her. The tree was too badly decayed to permit climbing, but the identification of the bird was beyond question, inasmuch as Mr. Greenleaf is an experienced bird observer, and the birds were watched carefully from a short distance. There were no conifers within 300 yards of the nest. Mr. Greenleaf notified the writer of his find on March 30 and plans were made to visit the nest, and if possible, to obtain some photographs of it within the next few days.

But on April 3 an unseasonable blizzard raged over eastern Nebraska, and it was evident that the trip would need to be postponed. Messrs. Greenleaf and Marsh, however, revisited the nest on Easter Sunday, April 4, and found the storm had wrecked the nest, leaving about half of it clinging in the crotch of the tree. As several inches of snow lay on the ground beneath the tree the fragments of any eggs that might have been in the nest could not be found, nor were they to be found later, after the snow had melted. The birds were still in the vicinity after the storm, and especially around the place where the nest had been, but no rebuilding of the nest was subsequently observed.

The disappointment of not having secured any tangible evidence of this nesting, which was the first record of the breeding of this bird in Nebraska, had scarcely subsided until information was received (on April 26) concerning another nesting, this time in a park in the little city of Broken Bow, Custer county, in the central portion of the state and near the eastern edge of the sandhills. This nest was found by a fourteen-year-old boy, Newell F. Joyner, and his mother, on March 20. This boy is a Boy Scout and keeps a record of the birds of his locality, so he is positive of the date. The nest was in a very open and exposed place in the park, in the crotch of an elm tree, about ten feet above the ground and directly above a side-walk. There are very few conifer trees in Broken Bow. The nest was not disturbed, and the female was ob-

served sitting upon it for several days before she was picked up dead by some children. The male had not been seen for several days before the death of the female.

Master Joyner has written some interesting facts about this nest. He says: "The female is the worker, building the nest all by herself, the male seeming to be the protector, flying with but just a little way off from the female. . . . There were two eggs in the nest, one of which had a hole in it and broke when it was touched. Due to the weather the other egg was frozen, but it soon thawed out and cracked. We saved the pieces."

The crossbills had been noted for some time before their nesting was observed, and on February 15, just after a heavy blizzard, a dead male crossbill was found. Later another dead male bird was found by some children, possibly the nesting male, and finally the nesting female, on the day that the deserted nest and eggs were collected. No injury was noticeable on the bodies of any of these birds thus found dead.

It is unfortunate that none of these dead crossbills were preserved, for it is yet an open question whether this record concerns the Eastern Red Crossbill (*Loxia curvirostra minor*) or the Rocky Mountain Red Crossbill (*L. c. bendirei*), which, by the way, is an excellent subspecies and should be recognized as such by the A. O. U. Committee. The Rocky Mountain form abounds in the Pine Ridge of northwestern Nebraska in winter, and may be found there in some years in the summer also, but has not been found nesting. During the winter it occurs more or less commonly over the entire state. The Eastern Red Crossbill we have found only in the late fall, winter and early spring in the eastern part of the state, though in some seasons very commonly.

The nest, along with the fragments of the egg which was frozen and broke on thawing, was presented to the Nebraska Ornithologists' Union collection by Master Joyner, who is entitled to credit for his valuable observations and willingness to place his find where it will be permanently preserved. I am also indebted to Mrs. Frances C. Morgan, a neighbor of Master Joyner, for having first acquainted me with the fact of the nest and for corroborating the above statements and the identification of the birds.

MYRON H. SWENK.

Lincoln, Nebraska.

Some Nelson County, Kentucky, Notes, 1920.

Worm-eating Warbler (*Helmitheros vermivorus*). Several of our ornithologists state that the song of the worm-eating warbler is somewhat similar to that of the chipping sparrow, and many a time I have hunted out a singing chippie at the edge of some thicket, or woods, half expecting to find this woodland warbler, but

invariably it proved to be the sparrow, and not the much-sought warbler. On the morning of July 11 I was rambling in the woods bordering the Beech Fork river, about three miles southeast of Bardstown; my course led me up a small stream bordered by deep thickets that extend along its banks from its confluence with the river for half a mile toward its source. I was walking slowly, occasionally gazing into the tree tops as I listened to the queer grating song of the Cerulean warbler. Perceiving an unknown warbler that was quietly hopping about among the branches of a sycamore tree, and in easy range of my collecting gun, I fired and brought it down. It was an adult worm-eating warbler, the first I had ever found in this locality. Though having taken the bird I was none the wiser as to its song, but it was a new species for my local list, and that was some satisfaction. Charles W. Beckham lists thirty-four members of the warbler family in his Birds of Nelson County, but he never found the worm-eating warbler here.

House Wren (*Troglodytes aedon*). Another new species for this locality is the house wren, which was observed on two occasions in May of this year. On the 8th of the month I was afield in one of my favorite stamping grounds about two miles southeast of town; everywhere birds were singing and all voices were familiar except one that seemed to come from a brush-heap at the edge of a cedar thicket. I had little trouble locating the singing bird, but it was some minutes before I could get a glimpse of it, so well did it remain concealed in the brush. Finally it hopped to the top of the pile to deliver its tinkling, bubbling, song and at once I recognized it as the house wren. Watching it for some time I was able to get several good views of it, thereby making identification certain. Four days later, May 12, I again observed a house wren, in an old rail fence near a house, in the same locality. This one was not singing, but from the lateness of the season I had some hopes of its breeding in the neighborhood. However, nothing more was seen of it and I suppose it was only a very late migrant. For many years I have looked for this wren, but always my search had been in vain. Bewick's wren is the species commonly breeding about town, though a few pairs of the noisy Carolina wren share town life with them.

Mockingbird (*Mimus polyglottos polyglottos*). Ten years ago this bird was one of the most common of the summer residents, a few wintering. In summer every farm had one or several pairs, and many nested in favorable places about town. For the past several years they have been noticeably decreasing in numbers, and where they were formerly numerous, the past summer they were scarce or entirely absent. In looking over my field notes for the past season I find that the mockingbirds seen during the summer would not have represented more than three or four pairs of nest-

ing birds, whereas, ten years ago twelve or fifteen pairs would have been found in the same territory. Several years ago it was a common thing to find mockinbgirds that had been taken at an age when about to fly and confined to a cage as pets. However, this practice is not so common now, and possibly when it existed it had but little effect on the number of mockingbirds as a good many of these birds picked up from the ground undoubtedly would have been caught by cats, or destroyed in some other way. In 1885 Beckham wrote concerning this bird in this locality: "Ten years ago they were comparatively rare here, but now there are few gardens or yards where one or more pairs do not nest." At present the order of this statement is reversed, and now the status of the mockingbird for this vicinity should read—Ten years ago they were common, now they are comparatively scarce.

BEN J. BLINCOE.

Bardstown, Ky., October, 1920.

A One-Day List of Birds at East Falls Church, Virginia.

By Ira N. Gabrielson

During the spring of 1917 the writer lived at East Falls Church, Va., on a small suburban place of one and one-half acres. This place was covered by a heavy growth of jack pines, with a small intermixture of persimmon, oak, hawthorne, and other deciduous timber. The lot across the road was grassland and from it such birds as the meadowlark and grasshopper sparrow came to our yard. During the spring migration it was an ideal place to observe the movements of warblers and other small birds. The height of the migration at this point, at least on the days when I could be present, was on May 19. During the day, beginning at daylight, I saw the following birds on this place:

1. Black-crowned Night Heron—*Nycticoras n. naevius.* Flying over.
2. Bob-white—*Colinus v. virginianus.*
3. Mourning Dove—*Zenaidura m. carolinensis.*
4. Turkey Vulture—*Cathartes a. septentrionalis.*
5. Sharp-shinned Hawk—*Accipiter velox.*
6. Yellow-billed Cuckoo—*Coccyzus a. americanus.*
7. Downy Woodpecker—*Dryobates p. medianus.*
8. Red-headed Woodpecker—*Melanerpes erythrocephalus.*
9. Flicker—*Colaptes a. auratus.*
10. Whip-poor-will—*Antrostomus v. vociferus.*
11. Nighthawk—*Chordeiles v. virginianus.*
12. Chimney Swift—*Chaetura pelagica.* Flying over.
13. Crested Flycatcher—*Myiarchus crinitus.*
14. Wood Pewee—*Myiochanes virens.*

15. Blue Jay—*Cyanocitta c. cristata.*
16. Crow—*Corvus b. brachyrhynchos.*
17. Meadowlark—*Sturnella m. magna.*
18. Baltimore Oriole—*Icterus galbula.*
19. Purple Grackle—*Quiscalus q. quiscula.*
20. Purple Finch—*Carpodacus p. purpureus.*
21. Goldfinch—*Astragalinus t. tristis.*
22. Grasshopper Sparrow—*Ammodramus s. australis.*
23. White-throated Sparrow—*Zonotricha albicollis.*
24. Field Sparrow—*Spizella p. pusilla.*
25. Song Sparrow—*Melospiza m. melodia.*
26. Chewink—*Pipilo e. erythrophthalmus.*
27. Cardinal—*Cardinalis c. cardinalis.*
28. Rose-breasted Grosbeak—*Zamelodia ludoviciana.*
29. Indigo Bunting—*Passerina cyanea.*
30. Scarlet Tanager—*Piranga erythromelas.*
31. Barn Swallow—*Hirundo erythrogastra.*
32. Tree Swallow—*Iridoprocne bicolor.*
33. Cedar Waxwing—*Bombycilla cedrorum.*
34. Red-eyed Vireo—*Vircosylva olivacea.*
35. Yellow-throated Vireo—*Lanivereo flavifrons.*
36. White-eyed Vireo—*Vireo g. griseus.*
37. Black and White Warbler—*Mniotilta varia.*
38. Nashville Warbler—*Vermivora r. rubricapilla.*
39. Tennessee Warbler—*Vermivora peregrina.*
40. Parula Warbler—*Compsothlypis a. americana.*
41. Cape May Warbler—*Dendroica tigrina.*
42. Yellow Warbler—*Dendroica a. æstiva.*
43. Black-throated Blue Warbler—*Dendroica c. cærulescens.*
44. Myrtle Warbler—*Dendroica coronata.*
45. Magnolia Warbler—*Dendroica magnolia.*
46. Chestnut-sided Warbler—*Dendroica pensylvanica.*
47. Bay-breasted Warbler—*Dendroica castanea.*
48. Black-poll Warbler—*Dendroica striata.*
49. Blackburnian Warbler—*Dendroica fusca.*
50. Black-throated Green Warbler—*Dendroica virens.*
51. Oven-bird—*Sciurus aurocapillus.*
52. Maryland Yellow-throat—*Geothlypis t. trichas.*
53. Yellow-breasted Chat—*Icteria v. virens.*
54. Canada Warbler—*Wilsonia canadensis.*
55. Redstart—*Cetophaga ruticilla.*
56. Catbird—*Dumetella carolinensis.*
57. Brown Thrasher—*Toxostoma rufum.*
53. Yellow-breasted Chat—*Icteria v. virens.*
58. Carolina Wren—*Thryothorus l. ludovicianus.*
59. House Wren—*Troglodytes a. aëdon.*
60. White-breasted Nuthatch—*Sitta c. carolinensis.*

61. Red-breasted Nuthatch—*Sitta canadensis.*
62. Tufted Titmouse—*Bæolophus bicolor.*
63. Carolina Chickadee—*Penthestes c. carolinensis.*
64. Wood Thrush—*Hylocichla mustelina.*
65. Olive-backed Thrush—*Hylocichla u. swainsoni.*
66. Robin—*Planesticus m. migratorius.*

NOTES—HERE AND THERE

Conducted by the Secretary.

Mr. Benj. T. Gault is preparing for the Illinois Audubon Society a "Checklist of the Birds of Illinois." It is planned to have it ready in time for spring migration.

Mr. Fred M. Dille, one of our pioneer western bird men, is in charge of the U. S. Biological Surveys' Niobrara Reservation for Wild Life in northern Nebraska. His postoffice is Valentine.

Hon. R. M. Barnes is piloting the venerable Oologist through its 38th year and expresses confidence in its future. We regret that Mr. Barnes missed the Chicago meeting by reason of getting the dates mixed.

Miss Althea R. Sherman, who in past years has written many valuable articles for the columns of The Bulletin, has of late been devoting her time and talents to securing the establishment of a National Monument park on the Mississippi River, near McGregor, Iowa.

Prof. Horace Gunthorp, formerly of Topeka, Kans., is now with the Department of Zoölogy of the University of Washington at Seattle. In the May, 1920, issue of School, Science and Mathematics, is published his paper on "Bird Study in the Mississippi Valley." In this paper is incorporated an analysis of the distribution of the membership of the three major bird clubs.

Professor Z. P. Metcalf of the North Carolina State College, has been elected Instructor in Ornithology and Entomology at the University of Michigan Biological Station, at Douglas Lake, for the coming session. He will give courses in elementary ornithology and direct the research work in ornithology as well.

Mr. Herbert L. Stoddard, formerly with the Field Museum, is now Curator of Ornithology in the Milwaukee Public Museum. One of the treats in store for our readers is a very thorough paper by Mr. Stoddard treating of the life histories of the Great Horned Owl. Mr. Wm. D. Richardson will furnish some of his excellent photos from life as illustrations.

Dr. L. Ottley Pindar, who wrote of Kentucky bird-life while

at Hickman, Ky., during the late eighties, is now located at Versailles, Ky., having recently received his discharge from the Medical Corps of the A. E. F. Dr. Pindar founded the young Oologists Association, which was the forerunner of The Wilson Club, and with our present Editor, our present President, Past President Frank L. Burns, and others, laid the foundations for our organization. Dr. Pindar is planning to take up more actively his long neglected ornithological work.

The Tennessee Ornithological Society has recently launched The Middle Tennessee Audubon Society and has entrusted to the new organization that portion of its work dealing with bird protection and education.

The Field Museum of Natural History at Chicago will open its doors to the public on June 1, 1921. The structure, which has been many years in building, will be one of the handsomest in the world devoted to museum purposes. We hope to give more details in a later number.

The Oologist Exchange and Mart, a well conducted little monthly published in England by Mr. Kenneth Skinner, is henceforth to be issued quarterly under the name of The Oologists' Record.

Our worthy contemporary, The Condor, is traveling the same stormy financial sea as is The Wilson Bulletin and is going to make the best of it until prices come back. Dr. Joseph Grinnell advises that they are succeeding nicely toward raising an endowment fund, the interest of which will go toward maintaining the publication.

The National Association of Audubon Societies have available for exhibition some wonderfully fine motion pictures of bird life. Those taken along the coast of the Gulf of Mexico and in Florida by Messrs. Finley and McClintock are probably the finest series of motion pictures ever taken of wild birds. Mr. Pearson, for many years secretary of the societies, is now its president, having succeeded the late William Dutcher.

It is a foregone conclusion that as a feature of our next annual meeting the sessions will be so arranged that our members may indulge more lengthily in informal interchange of notes and the making of new acquaintances. When bird students get together the conversation never drags so "talk fests" galore will be in order.

The museum of ornithology of Emory University in Atlanta is now the repository of the fine collections of Rev. Wm. L. La Prade of that city. Mr. La Prade, who is Honorary Curator, is an ardent field worker and is adding new material constantly. A list

of the rarer specimens in the museum is being prepared for publication in The Wilson Bulletin.

Our committee of Ways and Means, composed of Messrs Swenk, Stephens and Bales, are reporting good success toward achieving the results aimed at. There is a strong current of feeling that The Wilson Club shall go forward.

Quite a lot of interest is being attached to the outcome of the work of our two membership teams, which are being captained by Dr. T. C. Stephens of Sioux City, and Dr. Geo. R. Mayfield of Nashville, Tenn. If the members of these teams "acquit themselves nobly" we shall have something laudatory to say of them in a future issue. Aside from their actual results there will be much satisfaction in knowing that the work of the organization is being carried on by many willing hands.

Future meeting places for the Wilson Club are now receiving careful consideration. A most cordial invitation from our Chicago members has been extended and the Windy City bids fair to land the next meeting. Whenever the American Association for the Advancement of Science, with which The Wilson Club is associated, meets within the middle west it is a distinct advantage for us to meet with them. The A. A. A. of S. registration at Chicago was nearly 2500 and many of our members, being connected with other of the affiliated organizations, are thus able to kill two birds with one stone. The meeting places for the A. A. A. of S., thus far chosen, are: 1921, Toronto; 1922, Boston; 1923, Cincinnati; 1924, Washington; 1925 not yet decided upon, but Nashville, Tenn., will make a strong bid for the honor.

The draining of the Florida lakes and Everglades goes steadily on and a consequent diminution of the water-bird life is inevitable. Such species will not adapt themselves to new breeding grounds but will die out like the vast number of water-birds which formerly bred on the western plains. Visitors returning from Florida are predicting that its east coast will finally outstrip southern California as a winter resort. If only from a commercial standpoint, Floridians should conserve their water birds to offset in a way the glories of California's mountains.

The 1920 report of the U. S. Biological Survey is of much interest to ornithologists, mamologists, and conservationists generally. We learn therein that among the publications ready to be issued are three state lists, viz., Birds of Texas, Birds of New Mexico, and Birds of Alabama. Two hundred and fifty observers filled out and sent in the standard migration blanks during the year. Seventy bird reservations are now established, on thirteen of which wardens are maintained throughout the year. Permits for

collecting were issued to seven hundred and eighty-three individuals, from which figure it is evident that "the army of collectors" has dwindled to an almost negligible few.

Although it has been generally conceded that the last wild buffalo had disappeared from the American continent, the Canadian government sent an expedition to investigate the tales told by Indians of a large herd in the remote north. F. H. Kitto of the Canadian Department of the Interior, who headed the expedition, located a herd of approximately a thousand and secured photographs of them. The herd was found in the district south of Great Slave Lake and west of the Slave River. This herd brings the known number of buffalo in North America up to nearly ten thousand.

At the recent meeting Dr. Bales was drawn into relating some of his experiences among the tidal marshes of the Virginia coast, where he is wont to hie himself each June. One day, relates the Doctor, he left his balky guide in the boat and waded alone, deep into the quaking morass, in search of a colony of Laughing Gulls. Like a rainbow questrist he was drawn on and on, zigzagging erstwhile to keep within his depth, until finally he came upon the colony. Until now he had given little thought to his return, and a downpour had set in, with no more to guide him than the waving sawgrass, he vainly tried to retrace his steps. His load was as heavy as his legs were weary and with the tide rising he began to wonder what Mrs. Bales and the boys at home would do with his big egg collection. He floundered on and on until his recollection of passing events became very hazy. However, he recalls that when the guide finally dragged him over the gunwale he surveyed his sorry plight and gurgled out, in words of Mother Goose, "Lawk a mercy me, can this be I?"

ANNUAL MEETING

The seventh annual meeting of The Wilson Ornithological Club was held at Chicago, Ill., on December 27 and 28, 1920. As one of the constituent organizations forming The American Association for the Advancement of Science its meetings were held with the annual meeting of that body at the University of Chicago. The sessions of the various associated and affiliated organizations extended from December 27 to January 1.

The morning session of The Wilson Club began with a conference of the officers, following which the meeting was convened and the preliminary business taken up. President Strong sketched over the work of the past year and outlined the needs and possibilities for increasing the Club's activities during 1921. The report

of Treasurer Fordyce was read and developed the fact that, by careful management and by reducing the size of the official organ, a balance of about twenty dollars was on hand. Secretary Ganier reported on his work during 1920 and presented a list of 71 new members. The present membership, excluding those who are delinquent, was given as approximately 400. He spoke in favor of an aggressive campaign of activity for new members during 1921 and a larger membership fee to make possible a larger and more attractive official organ. Letters, from a number of members not in attendance, were read in support of this view. Editor Jones was called upon to outline his ideas. He expressed himself as wishing to see The Wilson Bulletin put on a good financial footing in order that at least 64 pages of illustrated matter might be published in each number. He also suggested and requested that several associate editors be appointed to assist in gathering suitable material.

The president gave the gist of some correspondence which had developed with a firm specializing in the publication of scientific periodicals and which had made a tentative proposition for taking over The Bulletin. A letter was read from Vice-President Oberholser favoring its acceptance. Inasmuch as the contract made necessary a considerable advance in dues and certain changes in the established editorial policy, the matter was referred to the Executive Committee, with instruction to report its recommendations at the afternoon session of the second day.

A committee on nomination of officers for the year 1921 was appointed and instructed to report at the same time. Upon motion the Club voted its support to the movement to make a National Park of the Sand Dunes of Lake Michigan along the Indiana shore. A committee consisting of Messrs. Schantz and Coffin and Miss Catherine Mitchell was instructed to draw up resolutions to that effect.

After lunch hour on the second day, business was again taken up. The committee on Indiana Sand Dunes presented their resolution, which was accepted and passed.

Mr. Metcalf brought in, from The Echological Society of America, resolutions protesting the use of our National Parks for water power or other commercial purposes. The Wilson Club voted its support and ratification of the resolutions.

The committee on nomination of officers reported that their recommendation was for the reëlection of the present officers, viz., R. M. Strong, President; H. C. Oberholser, Vice-President; Albert F. Ganier, Secretary; George L. Fordyce, Treasurer.

A committee of three was called upon to report on the matter of publication. They reported a unanimity of opinion that the official organ be enlarged to at least 48 pages, but there was

divergence of opinion as to how the means should be secured. It was brought out by Dr. Swenk that a raise in dues would make necessary a revision or abrogation of the contract with the Nebraska Ornithologist's Union. After considerable discussion, Mr. Ganier moved that the dues be raised to two dollars for Associate and three dollars for Active members. Dr. Jones amended, that the subscription be raised to two dollars. The question of the legality of such action at this time was raised, and the point being sustained, it was agreed to defer action until the next annual meeting, at which time the whole matter of the increase of membership dues, subscription price of the official organ, and the publication procedure of the official organ will be up for action.

It was later voted to advance the subscription price of The Wilson Bulletin to non-members to $1.50.

The Committee asked for an extension of time in which to study the proposal from the publishing concern relative to taking over the management of The Bulletin. The request was granted and they were instructed to make a definite recommendation at the next meeting.

A committee of Ways and Means, consisting of Messrs. Swenk, Stephens and Bales was appointed by the president to canvas the membership to lay before them in detail the financial needs of The Club and to receive funds for enlarging The Bulletin. The Secretary volunteered to organize two competing membership teams to increase the membership. A vote of thanks was extended to the Chicago Ornithological Club, through its committee chairman, Mr. Coffin, for the many courtesies shown the Wilson Club during its meeting.

The literary and social features of the Chicago meetings were particularly successful. A registration of members showed 32 present and nearly as many visitors. Quite a number of those present had come from a considerable distance and the interchange of experiences thus afforded was most profitable to all. A well selected list of papers was read at the meeting and illustrations were well above the average. The subject of the President's address was "The Problem of Soaring Flight," in which Dr. Strong gave the result of his observations during the past few summers on the Great Lakes, and with particular reference to the flight movements of gulls and terns. Several reels of motion pictures were secured from the National Association of Audubon Societies, and were much appreciated.

A motion was made by Dr. Jones, and passed, thanking Mr. T. Gilbert Pearson for the loan of the motion picture reels.

The evening meeting was a feature, affording as it did opportunity for informalities and the making of new acquaintances. A number of paintings, by Mr. Carl Plath, were on exhibition, as

well as one of the Duck Hawk from the brush of Mr. George M. Sutton, and loaned by the owner. The evening was concluded with Mr. Richardson's collection of slides, at which time over 250 accurately tinted and splendidly taken views of birds and wild flowers were thrown on the screen.

When the hour of adjournment arrived, at the close of the second day, those who had attended expressed themselves as well repaid for their time and not a little loath to wait a year for a repetition of the pleasure.

The complete program was as follows:

MONDAY, DECEMBER 27

9:30 A. M.—Conference of Officers.
Business Meeting of the Club.
The New Standard Catalog for Oological Exchange,
B. R. Bales, Circleville, O.
Ornithological Pot-Pourri—Members.
President's Address.

12:30 P. M.—Buffet Luncheon, Men's Cafe, University of Chicago Campus.

2:00 P. M.—Bird Banding; Purpose, Methods and Results.
(Slides)—S. Prentiss Baldwin, Cleveland, O.
Bird Banding in the Douglas Lake Region of Northern Michigan.
(Slides)—Dayton Stoner, Iowa City, Iowa.
Observations Made on Auto Trips Through the Far West, Lynds Jones, Oberlin, O.
Bird Notes from Eastern Florida, (Slides),
Gerard Alan Abbott, Gallipolis, O.
Breeding Warblers About Atlanta, Ga.,
Wm. H. La Prade, Atlanta, Ga.

MONDAY EVENING

6:30 P. M.—Annual Dinner at the City Club, Plymouth Place, near Van Buren St.

8:30 P. M.—Birds and Seasons in the Chicago Area.
(Slides)—Wm. D. Richardson, Chicago, Ill.

TUESDAY MORNING, DECEMBER 28

9:00 A. M.—Impressions of a Nature Lover in the Appalachian Mountains, (Slides),
O. M. Schantz, Cicero, Ill.
June Bird Notes from the Great Smoky Mountains of Tennessee,
Albert F. Ganier, Nashville, Tenn.
Changes in Bird Habitat and Other Notes,
C. W. G. Eifrig, Oak Park, Ill.
The Great Horned Owl,
Herbert L. Stoddard, Milwaukee, Wis.

2:00 P. M.—Reports of Committees and Conclusion of Business.
Songs and Call Notes of Warblers,
George R. Mayfield, Nashville, Tenn.
Symposium of Bird Notes from the Nebraska Region,
Myron H. Swenk, Lincoln, Neb.
Notes on Birds of the Cape Fear Region of the North Carolina Coast, (Slides),
Z. P. Metcalf, West Raleigh, N .C.
Seabird Colonies Along the Texas Gulf Coast.
Motion Pictures taken by Wm. H. Finley, for the National Audubon Societies.
Adjournment.

CORRESPONDENCE

Comments on Migration Records of Eastern Kansis Birds.—In the Wilson Bulletin of December, 1920, Mr. P. B. Peabody, Blue Rapids, Kan., seeks more light on the migration records for Kansas birds; critically reviewing the list published at the University of Kansas, Department of Zoölogy. Being entirely unacquainted with the parties who have of late years worked over these records in the University I have no disposition to defend them beyond my personal knowledge of the facts. I happen to know, however, that the first records had their foundation in work done many years ago and that they are the result of cumulative painstaking observation and effort.

I had the following experiences at the Fort Leavenworth Military Reservation and vicinity, as may be gathered from my article in the September number of the Wilson Bulleton. The Whip-poorwill (*Antrostomus vociferus vociferus*) is extremely abundant, and I have flushed them several times in broad daylight almost from under my feet. As to the Redstart (*Setophaga ruticilla*) it was common in pairs that were always found in the same locality and no doubt nesting, my observations extending up to June 30.

As to the Summer Tanager (*Piranga rubra rubra*) it was not extremely rare. My original record for Kansas of a summer resident pair of Louisiana Tanagers (*Piranga ludoviciana*) I fear will knock some bird men off the Christmas tree, and may merit the criticism: "This is absurd, enough." However, this pair was seen several times at close range and in good light. There is no other bird to my knowledge which could be mistaken for it even with field observation alone.

I do not believe that the birds care particularly about our records on Ornithology and they often migrate beyond our lawful ranges for them. It is possible, of course, to be mistaken in field observations, but as to observations that were made under proper

conditions and on species that are generally identified with ease on sight the observer's findings should not be condemned because the experiences of others have not precisely fallen into the same category.

I hope that this comment will give some benefit in bird study for the Kansas records, and I believe that these criticisms are very much worth while in stimulating interest in the development of records and helpful in perfecting them.

DAVID C. HILTON.

REVIEW OF LITERATURE

What Bird is That? A Pocket Museum of the Land Birds of the Eastern United States Arranged According to Season. By Frank M. Chapman, Curator of Birds in the American Museum of Natural History and Editor of "Bird-Lore." With 301 Birds in color by Edmund J. Sawyer. D. Appleton and Company. New York. London. 1920.

In this little book of 144 text pages, and six pages of discussion of "Birds and Seasons," and the 301 colored figures of birds, which are arranged on eight full page plates, Mr. Chapman has put within reach of all a handy little volume which should be the companion of every lover of birds who is not sufficiently familiar with the common land birds to feel confident of their identity at sight. One great merit of the colored figures is that all are drawn to scale on each separate plate. Many of the colored figures are admirably done as to pose, proportions and color. A very few would, of course, be of little use for purposes of either field or laboratory identification, partly because they have no distinctive features, notably the small flycatchers and some of the sparrows. We cannot but exclaim over the mechanical accuracy which is shown in the color plates. One of them contains fifty-five figures, and yet not one of them is blurred in the copy at hand. The book is small enough and light enough to be easily carried as a field companion. It is fully up to the high standard of excellence of Mr. Chapman's various writings.

A Distributional List of the Birds of Montana. With notes on the migration and nesting of the better known species. By Aretas A. Saunders. Pacific Coast Avifauna No. 14. Cooper Ornithological Club.

In this list there are 337 species treated, including one extinct and four introduced species, but not counting 13 treated as hypothetical. The book begins with a discussion of the distributional areas of Montana, with accompanying map. This discussion is

accompanied by seven half-tone reproductions of photographs illustrative of typical landscape features. The text contains 27 half-tone reproductions of eggs and birds from photographs made in the field. There are ten pages of bibliography, and a full index of the species which are treated. The text is concerned with the occurrence, migration and nesting of the species. The only suggestion which the reviewer would offer is that clarity would have been enhanced if mention were made of the distributional area in which each species occurs in addition to giving the political division. In a state of the size and diversified topography of Montana it is not easy for the person who is unacquainted with its counties and cities to trace out the places in which the species under discussion occurs when only political divisions are mentioned. We have seen no distributional list which is superior to this one, and few its equal.

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